

## PATENT COOPERATION TREATY

## PCT

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>WO 24604   | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |  |
| International application No.<br>PCT/EP99/06860   | International filing date (day/month/year)<br>09/09/1999   | Priority date (day/month/year)<br>09/09/1999 |
| International Patent Classification (IPC) or national classification and IPC<br>H04L12/18 |  |  |
| Applicant<br>NOKIA NETWORKS OY  |  |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

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|---|---|
| Date of submission of the demand<br><br>09/04/2001  | Date of completion of this report<br><br>14.12.2001   |
| Name and mailing address of the international preliminary examining authority:<br><br> European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized officer<br><br>Jimenez Hernandez, P<br><br>Telephone No. +49 89 2399 7938<br> |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/06660

**I. Basis of the report**

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):  
Description, pages:

1-11 as originally filed

**Claims, No.:**

1-30 as originally filed

**Drawings, sheets:**

1/3-3/3 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

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EXAMINATION REPORT**

International application No. PCT/EP99/06660

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

|                               |      |                        |
|-------------------------------|------|------------------------|
| Novelty (N)                   | Yes: | Claims 5-14, 19, 21-30 |
|                               | No:  | Claims 1-4, 15-18, 20  |
| Inventive step (IS)           | Yes: | Claims                 |
|                               | No:  | Claims 1-30            |
| Industrial applicability (IA) | Yes: | Claims 1-30            |
|                               | No:  | Claims                 |

2. Citations and explanations  
see **separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
see **separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see **separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/EP99/06660

**Cited Documents**

D1: JIANZHONG ZHOU: 'Heterogeneous multicasting based on RSVP and QoS filters' COMMUNICATION TECHNOLOGY PROCEEDINGS, 1998, [Online] vol. 2, 22 - 24 October 1998, pages 1-8, XP002140105 ICCT '98 ISBN: 7-80090-827-5 Retrieved from the Internet: <URL:www.lsl.ihs.com> [retrieved on 2000-06-14]

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. The subject-matter of independent claim 1 is not novel, Art. 33 (1) and (2) PCT:

1.1 D1, which relates to the same area of heterogeneous multicasting in packet-switched networks as the application, is considered as the closest prior art.

D1 discloses, in the terminology of claim 1, a method in a packet-switched network for supplying data packets to receivers belonging to a multicast group, comprising the steps of: receiving data packets from a sender; buffering data packets the destination address of which is a multicast address of a multicast group; determining the addresses of the receivers of the multicast group indicated by the multicast address (see Title, page 1, lines 6-9, page 2, lines 12-14, page 5, lines 13,14, Figure 4)(\*).

D1 also discloses the steps of determining receiver-specific parameters (page 2, line 19, page 4, lines 2-4), filtering the multicast data packets in accordance with the receiver-specific parameters for each receiver of the multicast group and supplying the filtered multicast data packets to the determined receiver addresses (page 4, last paragraph, page 5, point 3.3.1 and Fig. 4).

D1 therefore discloses all the features of claim 1.

(\*) It is further noted that lines 1-8 of Claim 1 are common knowledge in multicast technique as acknowledged by the Applicant in the Description, page 1, lines 20-

28. Some of the features defined in that part of Claim 1 may not be explicitly described in D1, however all these features (eg determining addresses belonging to a multicast group, buffering multicast packets) are inherent in the context of D1, which discloses multicasting based on RSVP and IGMP. See also eg IETF RFC 966, "A Multicast Extension to the Internet Protocol" dated Dec. 1985.

If novelty were disputable based on some minor difference of interpretation, it is pointed out that the subject-matter of claim 1 would in any case not involve an inventive step over the disclosure of D1 (Art. 33(3) PCT), given that D1 attempts to solve the same problem (*"considering different needs of different subscribers belonging to a multicast group"*, lines 31, 32 of page 1 of the Description; *"...support for heterogeneous group communication..., the data stream to be forwarded can be tailored to the individual needs of single group members"*, D1, page 1, last paragraph - page 2, first paragraph) and describes the same type of solution as presently claimed in claim 1.

2. The subject-matter of independent claim 6 does not involve an inventive step over the disclosure of D1 and claim 6 therefore does not meet the requirements of Art. 33 (1) and (3) PCT:
- 2.1 The only difference between the subject-matter of claim 6 and that of claim 1, which is fully anticipated by D1, is that **addresses** are filtered, ie packets are filtered depending on the **destination address**. However, this is a common variation. Actually, address filtering based on receiver-specific parameters as defined in claim 6 is also a type of packet filtering based on receiver-specific parameters as defined in claim 1, in which the filtering function is an abrupt one: packet discarding.
3. The lack of novelty objection starting from D1 (Art. 33 (1) and (2) PCT) also applies to the subject-matter of independent claim 15, which corresponds to that of claim 1:
- 3.1 Claim 15 relates to an apparatus in a packet-switched network comprising means which are characterized by performing the method steps defined in claim 1 and provides no additional technical feature. Therefore the reasoning in Point 1 also

applies to claim 15.

4. The lack of inventive step objection starting from D1 (Art. 33 (1) and (3) PCT) also applies to the subject-matter of independent claim 21, which corresponds to that of claim 6:
- 4.1 Claim 21 relates to an apparatus in a packet-switched network comprising means which are characterized by performing the method steps defined in claim 6 and provides no additional technical feature. Therefore the reasoning in Point 2 also applies to claim 21.
5. The additional features of dependent claims 2-5, 7-14, 16-20 and 22-30 do not seem to add anything novel and inventive to the independent claims because these features are either known from the closest prior art document D1 (claims 2-4, 11, 16-18, 20, 22, 25, 26, 30) or common measures or variations (claims 5, 7-10, 12-14, 19, 23, 24, 27 and 28).
6. The application thus seems not to contain any patentable subject-matter.

Should the Applicant nevertheless have regarded some particular matter as patentable, an independent claim including such particular matter should have been filed, taking account of Rule 6.3(b) PCT. The Applicant should also have indicated in the letter of reply the difference vis à vis the state of the art and the inventive significance thereof.

**Re Item VII.**

**Certain defects in the international application**

1. The independent claims should have been in the two-part form vis-à-vis D1, Rule 6.3(b) PCT.
2. D1 should have been mentioned in the description, Rule 5.1(a)(ii) PCT.
3. The description should have been adapted to any new claims, Rule 5.1(a)(iii) PCT.

Re Item VIII

Certain observations on the international application

1. The claims should have defined the relevant subject-matter in terms of a single independent claim in each category followed by dependent claims covering features which are merely optional (conciseness, Art. 6 PCT and Rule 6.4 PCT). Although claims 1 and 6 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter, see also Item V, Point 2.1. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection. A single independent claim in each category appears in this case appropriate.

Hence, claims 1 and 6 in the method category and the corresponding claims 15 and 21 in the apparatus category do not meet the requirements of Article 6 PCT.

2. The wording "without departing from the true spirit and scope of the invention" on page 11, line 23 of the description casts doubts on the scope of the claims (Art. 6 PCT), see PCT International Preliminary Examination Guidelines, III-4.3a.
3. The apparatus claims 15, 18, 20, 21, 22, 24, 27, 28 and 30 are partially characterized by method features (eg "...wherein the routing means (2) filters..." in claim 15), thus rendering the category of these claims unclear. This deficiency could have been overcome by re-wording these features with "adapted to", eg "...wherein the routing means (2) is adapted to filter...", etc. (Art. 6 PCT).
4. Claim 7 is rendered unclear (Art. 6 PCT) due to the lack of an antecedent definition for the expression "*the detected results*" (claim 7, line 18).